Daily Current Affairs Prelims Quiz 09-10-2024 (Online Prelims Test)

1) Consider the following statements with respect to Major Atmospheric Cherenkov Experiment (MACE) Observatory

1. It is an imaging atmospheric Cerenkov telescope (IACT) that consists of a large-area tessellated light collector.
2. The telescope is indigenously built by Bhabha Atomic Research Centre (BARC) with support from Electronics Corporation of India (ECIL) and other Indian industry partners.
3. It is the highest (in altitude) and second largest Cerenkov telescope in the world.

How many of the statements given above are correct?

a. Only one
b. Only two
c. All three
d. None of the above

Answer : c

Major Atmospheric Cherenkov Experiment (MACE) Observatory

The Major Atmospheric Cherenkov Experiment (MACE) Observatory was recently inaugurated by the Secretary of DAE & Chairman of the Atomic Energy Commission at Hanle, Ladakh.

- Major Atmospheric Cerenkov Experiment Telescope (MACE) is an *imaging atmospheric Cerenkov telescope (IACT)* located near Hanle, Ladakh, India.
- It is the *highest (in altitude)* and *second largest Cerenkov telescope* in the world.
- It is *indigenously built* by Bhabha Atomic Research Centre (BARC) with support from Electronics Corporation of India (ECIL) and other Indian industry partners.
- The telescope is the *second-largest gamma ray telescope in the world*.
- The MACE Telescope consists of a *large-area tessellated light collector* of 356 m^2, made up of 356 mirror panels.
- A *high-resolution imaging camera* weighing about 1200 kg, for detection and characterization of the atmospheric Cherenkov events, forms the focal plane instrumentation of the telescope.
- The elevation over azimuth mounted telescope basket structure has two axes movement capability of ± 270° in azimuth and -26° to +165° in elevation for pointing towards any source in the sky and tracking it.
- The telescope, which weighs about 180 tons, is supported on 6 wheels which move on a 27-metre-diameter track.
- The telescope has an *integrated imaging camera*, which contains 1088 photo multiplier-based pixels and all the signal processing and data acquisition electronics.
- The camera communicates the acquired data to the computer system in the control room over optical fiber.

2) Consider the following statements with respect to National Cooperative Consumer's Federation of India Ltd (NCCF)

1. It is registered under the Multi-State Co-operative Societies Act, 2002.
2. It is a cooperative body under the Ministry of Consumer Affairs, Food and Public Distribution.

Which one of the statements given above is/are **incorrect**?

a. 1 only
b. 2 only
c. Both 1 and 2
d. Neither 1 nor 2

Answer : d

National Cooperative Consumer's Federation of India Ltd (NCCF)

NCCF has recently began selling tomatoes at Rs 65 per kg recently amid soaring prices of the kitchen staple ahead of the festival season.

- NCCF was established on 16th October, 1965 to function as the apex body of consumer cooperatives in the country.
- It is registered under the Multi-State Co-operative Societies Act, 2002 and operates through a network of 27 Branch Offices located in different parts of the country.
- NCCF Headquarters is situated in New Delhi and the *management* of NCCF vests in the ***Board of Directors***.
- The *ultimate authority of NCCF* vests in the hands of the ***General Body***.
- Board of Directors exercises all the powers of NCCF except those reserved for General Body.
- The current sanctioned strength of the Board of Directors is 21.

3) Consider the following statements with respect to Artificial Neural Network (ANN)

1. ANNs are collections of nodes designed to mimic neuron networks in animal brains.
2. Transformer, a new form of ANN is a two-part neural network that encodes and then decodes information.
3. Deep learning involves stacking multiple layers of nodes for complex tasks.

How many of the statements given above are correct?

a. Only one
b. Only two
c. All three
d. None of the above

Answer : c

Artificial Neural Network (ANN)

- Artificial neural network (ANN) is a *collection of nodes* designed to operate like networks of neurons in animal brains.
- Each node is a site where some input data is processed according to fixed rules to produce an output.
- A connection between nodes allows them to transfer input and output signals to each other.
- Stacking multiple layers of nodes, with each layer performing a specific task with great attention to detail, creates a machine capable of deep learning.

- **Transformers** – A new *form of ANN* is a *two-part neural network* that encodes and then decodes information.
- The first part is an 'encoder' that ingests the input sentence in the source language (e.g. English) and the second is a 'decoder' that generates the translated sentence in the target language (Hindi).
- Transformers are also the *bedrock of generative models* that create realistic images and audio.
- Their utility in diverse domains makes transformers a very powerful and universal model.
- **Deep learning** – A subset of machine learning in which *multi-layered neural networks* learn from vast amounts of data.
- Deep learning involves *stacking multiple layers of nodes* for complex tasks.
- **Convolutional neural networks (CNNs)** – Are *deep learning architectures* that are used in various applications.
- The applications include image and video processing, natural language processing (NLP) and recommendation systems.

4) Consider the following statements with respect to Trachoma

1. Blindness from trachoma is irreversible in nature which is caused by the bacterium Chlamydia trachomatis.
2. The infection is transmitted by direct or indirect transfer of eye and nose discharges of infected people.
3. India is the first country in the South-East Asia Region to eliminate trachoma.

Select the correct answer using the code given below:

a. 1 and 2 only
b. 2 and 3 only
c. 1 and 3 only
d. 3 only

Answer : a

Trachoma

World Health Organisation (WHO) has recently declared that the Government of India has eliminated Trachoma as a public health problem.

- Trachoma is a disease of the eye caused by infection with the bacterium Chlamydia trachomatis.
- It is caused by an obligate intracellular bacterium called *Chlamydia trachomatis*.
- Blindness from trachoma is ***irreversible***.
- **Transmission** – Infection spreads through personal contact (via hands, clothes, bedding or hard surfaces) and by flies that have been in contact with discharge from the eyes or nose of an infected person.
- **Symptoms** – It causes pain and *may permanently damage* the cornea.
- **Public health concern** – It is a *public health problem in 42 countries* and is responsible for the blindness or visual impairment of about 1.9 million people.
- **Prevention and control** – Elimination programmes in endemic countries are being implemented using the WHO-recommended ***SAFE strategy***. This consists of:
    - **S**urgery to treat the blinding stage (trachomatous trichiasis),
    - **A**ntibiotics to clear infection, particularly mass drug administration of the antibiotic azithromycin, which is donated by the manufacturer to elimination programmes, through the International Trachoma Initiative,
    - **F**acial cleanliness and
    - **E**nvironmental improvement, particularly improving access to water and sanitation.

- Most endemic countries have agreed to accelerate the implementation of this strategy to achieve elimination targets.
- **Impacts** – The economic cost in terms of *lost productivity* from blindness and visual impairment is estimated at USD 2.9–5.3 billion annually, increasing to USD 8 billion when trichiasis is included.
- As of June 2022, *125 million people* live in trachoma endemic areas and are at risk of trachoma blindness.
- **India** – India has successfully eliminated trachoma, a bacterial infection that affects the eyes, as a public health problem.
- India is the ***3rd country*** in the South-East Asia Region to eliminate trachoma. (**Statement 3 is incorrect**)
- India's success is due to the strong leadership of its Government and the commitment of ophthalmologists and other cadres of health-care workers.

5) Consider the following statements with respect to Monocled Cobra

1. It is an elapidae snake that inhabits eastern and north-eastern India.
2. It is an oviparous species with neurotoxicity and regional tissue destruction being chief symptoms of it.

Which one of the statements given above is/are correct?

a. 1 only

b. 2 only

c. Both 1 and 2

d. Neither 1 nor 2

Answer : c

Monocled Cobra (Naja kaouthia)

According to a new study, Species-Specific and region-specific anti-venoms are needed for improving treatment of monocled cobra bites.

- The monocled cobra (Naja kaouthia), also called monocellate cobra is a cobra species.
- The monocled cobra causes the highest fatality due to snake venom poisoning in Thailand.
- **Distribution** – It is widespread across South and Southeast Asia.
- In India, it inhabits eastern and north-eastern India.
- They can adapt to a range of habitats, from natural to anthropogenically impacted environments.
- They prefer habitats associated with water, such as paddy fields, swamps, and mangroves, but can also be found in grasslands, shrub-lands and forests.
- **Conservation** – It is listed as Least Concern by International Union for Conservation of Nature red list.
- Naja kaouthia is listed on CITES Appendix II.
- **Characteristics** – It has an O-shaped, or monocellate hood pattern, *unlike that of the Indian cobra*, which has the "spectacle" pattern (two circular ocelli connected by a curved line) on the rear of its hood.
- It has a *black spot* on the lower surface of the hood on either side, and one or two black cross-bars on the belly behind it.
- The elongated nuchal ribs enable a cobra to expand the anterior of the neck into a "hood".
- **Threats** – Monocled cobras are harvested for the skin trade, however, collection from the wild is minimal and not likely to cause significant population declines.